

AD168
Matrix Switcher/Controller System

System Operator's Manual



AD168

Video Matrix Switching System

System Operator's Manual

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WARNING

Do not install this product in hazardous areas where highly combustible or explosive products are stored or used.

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Operation of this equipment in a residential area may cause interference in which case the user will be required to correct the interference at his own expense.

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About This Manual

The AD168 system operator's manual provides detailed information about AD168's features, operation, and application. It explains step-by-step the tasks that you - the operator - will perform when using the AD168 system. It is designed to be a continuing reference source as you use the AD168 system.

How to Use This Manual

This manual is organized as follows:

- Chapter 1: "About the AD168 Video Switching System" describes what AD168 does and how it is used. It also identifies the equipment installed and used with the AD168 system, and discusses your role as a system operator.
- Chapter 2: "Using a Keyboard Controller" discusses the use of the AD2078A keyboard to perform AD168 operations - from camera and auxiliary output control to handling incoming alarm signals.
- Appendix A, "AD168 System Defaults" lists the programming defaults for the AD168 system software.
- Appendix B, "On-Screen Status Line Displays" describes the text messages which appear on monitor screens during normal system operations.
- Appendix C, "Printer Messages" lists the messages available for output to a printer connected to the AD168 central processing unit.
- Appendix D, "SpeedDome Series Programmable Commands" lists commands applicable for AD168 systems that use SpeedDome and SpeedDome Ultra units as video inputs.
- Appendix E, "Software License Agreement" describes the terms and conditions under which AD168 software is licensed to the customer.
- Glossary - the glossary provides concise definitions of a range of the technical terms used in this document. We recommend that you consult this section if you are unfamiliar with the vocabulary of video switching technology.

Related Documents

Other sources provide supplemental information about AD168

- *AD168 Installation and Service Manual*, document number 8000-0934-01
- *AD168 System Administrator's Manual*, document number 8000-0935-01
- *AD Touch Tracker® Operator's Manual*, document number 8000-1657-02

If you need additional copies of the AD168 System Operator's Manual, or any other support documentation, contact your AD sales representative. The document number for this manual is 8000-0936-01.

AD168 Support Services

AD provides a variety of support services to help you use your system most effectively. If you have a question about AD168 operation and cannot find the answer in this document, consult your system administrator. If your question remains unanswered, contact AD technical support at 1-800-442-2225.

System Training and Consultation Services

If you feel that you require additional training beyond that administered by your Customer Support Specialist or Customer Engineer, contact your supervisor or local AD sales representative to learn about supplemental training options.

Chapter 1: About the AD168 Video Switching System

This chapter briefly discusses your role as an AD168 system operator, describes the features and capabilities of the AD168 system, and identifies the equipment the AD168 system supports.

System Overview

AD168 is a *video matrix switching system*. The system is comprised of the following major components:

- *Video Inputs* - These are the cameras that are installed at your facility. They keep watch on the key security areas at your site. Some of the cameras are installed in a fixed position and provide a single, unchanging view. Other cameras, often enclosed in *domes*, have the ability to move from side to side and up and down, and can also zoom and focus. These *pan/tilt* cameras provide a wide variety of viewing possibilities. They can be pre-programmed to show specific shots and viewing patterns on immediate demand, and their movements can be controlled freely from authorized operator keyboards. System cameras are often associated with *alarm contacts* and *auxiliaries*. The alarm contacts respond to system events like the opening of doors or windows, or motion detected in a restricted zone. When an alarm is activated, the associated camera alarm scene is available for immediate viewing and response by system operators. Auxiliaries are relay switches that control the “on” and “off” state of devices that are situated in a camera’s viewing area. System operators can use auxiliaries to open and close doors and gates, turn lights off and on, and switch emergency signals.
- *Video Outputs* - These are the video monitors and recorders that are located in the workstations at your facility. The monitors allow system administrators and operators to watch system events in real time, and respond promptly with appropriate actions. VCRs provide a visible record of events that occur over extended intervals, and back up the real time observations of system personnel.
- *The AD168 Switching Bay* - The switching bay contains the brains of the AD168 system. The bay enables any video input to be switched to any video output, such that operators can watch different camera scenes cycle in sequence on a single monitor, or watch multiple scenes shown simultaneously on a group of monitors. The bay’s processor enables programming of the automatic display of various camera sequences at different times of day, along with appropriate alarm and auxiliary responses. The bay is mounted on a rack in a centrally convenient location in your facility. Camera and monitor cables are routed into and out of the bay, along with data cables that communicate with other devices that aid in system monitoring and control.
- *The Workstations* - The workstations are where system administrators and operators perform their system setup, monitoring, and control functions. Using their keyboards, operators can “call” cameras to view on workstation monitors, and control camera movements with key commands. An operator may control video switching manually, or observe and respond to automatic video sequences. The number of operators, keyboards, and monitors in a given workstation will vary according to system requirements. The AD168 system can accommodate up to 168 cameras, 24 monitors, and 32 keyboards at a single site, but a workstation can be as simple as a VCR in a locked closet, recording events during off-hours.

AD168 System Features

The AD168 system enables you to oversee activities throughout your facility as they occur. This powerful monitoring capability allows you to respond to events promptly, and coordinate with other personnel to provide optimal site security.

Features available to AD168 operators include the following:

- *matrix switching* - selecting workstation monitors for video display, and subsequent selection of system cameras to view on the monitors.
- *camera control* - the ability to adjust a camera's pan and tilt movements and its lens settings with simple commands on your keyboard.
- *preset (target) callup and viewing* - the ability to callup pre-programmed camera positions for cameras with pan/tilt and motorized lens capability.
- *tour activation and control* - the ability to run pre-programmed camera sequences in forward or reverse order. The ability to hold a tour on a single camera, and then control the camera's movements for optimal response to an on-going event.
- *salvo call-up* - the ability to call multiple camera scenes for simultaneous display on a group of monitors.
- *auxiliary control* - the ability to control switches that perform actions such as opening doors, closing gates, turning lights on and off, etc. with keyboard commands.
- *pattern callup and viewing* - if your system is equipped with SpeedDome series domes, you can run a pre-programmed pattern of camera views. For example, pattern viewing allows easy observation of someone entering through a doorway, and then tracking that person's movements through a hallway.
- *alarm acknowledgment* - the ability to recognize system alarm conditions as they occur, and the means to clear the alarms and initiate an appropriate security response.

AD168 System Equipment

Each AD168 system is made up of a unique set of equipment determined by site requirements. Some of the equipment discussed below is necessary, and some is optional. System equipment falls into one of the following categories:

- Equipment that operators use
- Equipment that controls the AD168 system
- Peripheral equipment

Equipment That Operators Use

As a system operator, your first concern is with the equipment you use hands-on. For the AD168 system this equipment is the AD2078A keyboard controller and the workstation monitors.

- The *AD2078A keyboard controller* is the device you use to select monitors and cameras, and control camera movements. With the AD2078A you can make zoom, focus, and iris adjustments on system cameras, and can call up pre-defined camera views and patterns. You can control switched outputs, and clear alarms. The AD2078A is covered in detail in Chapter 2 of this document.
- The *workstation monitors* are where the camera video signals are displayed. Monitors connected from the system's switching bay will have a *text overlay* which provides information about the displayed video. *Dedicated monitors*, connected directly to cameras via coaxial cable, typically display video alone.
- *VCRs* are typically part of the workstation environment for both time-lapse and real time recording.

- The *AD Touch Tracker* is another keyboard which can control system functions. It duplicates the functionality of the AD2078A but has a different key layout and design. Instructions in this document will refer to the 2078A. For information about the Touch Tracker® refer to the AD Touch Tracker Manual, document number 8000-1657-02.

Equipment That Controls AD168

The equipment that enables you to perform complex video switching functions with simple key commands is the AD168 *switching bay*. The bay contains central processing and power supply circuits, and modules that connect to the system cameras and monitors. An optional bay module is available which connects directly to domes and pan/tilt cameras without the need for interface devices. The bay is mounted on a rack at a centrally convenient location, and connects to all system keyboards. Connections to, and servicing for the bay should only be performed by qualified technical personnel.

For full-scale operations, bay programming is initially set up and edited by the system administrator using a PC and software provided by American Dynamics. Small scale operations can be programmed by the administrator or an authorized operator directly from an AD2078A or Touch Tracker. System keyboard programming is performed in concert with a *program monitor* connected to the switching bay.

The bay is connected to a *system printer* which automatically outputs hard copy system status messages. Printer documentation provides an important record of system events in the order in which they happen.

Peripheral Equipment

Other devices that may be connected to the switching bay include the following:

- *Alarm interface units*
- *Auxiliary interface units*
- *Code distribution, conversion, and translation devices* used for the control of pan/tilt cameras and programmable domes.
- *Port expanders* which enable the connection of additional system keyboards.
- *Receiver / Drivers* used for the control of pan/tilt cameras

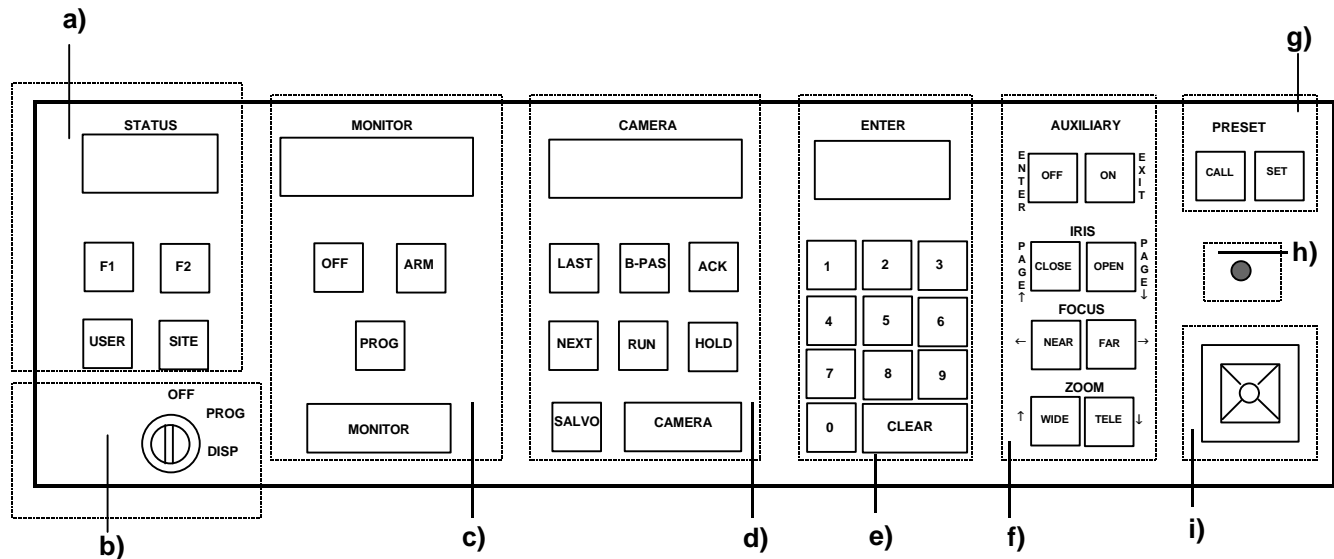
Depending on the requirements of your facility, additional special input devices may be required. Motion detectors, twilight sensors, and smoke detectors provide a few examples of such devices.

Chapter 2: Using a Keyboard Controller

The AD168 system can be controlled by one of two keyboards: the AD2078A or the ADTT Touch Tracker. Keyboard operation discussed in this document will be expressed in terms of the 2078A key set. For information on the ADTT Touch Tracker, refer to document number 8000-1657-02.

Keyboard Layout

The AD2078A keyboard is comprised of the following sections:



a) Status Section -

The *STATUS display window* shows information related to satellite installations (not supported in the current release).

The *F1 and F2* keys are special function keys used to execute a set of double key commands.

The *USER* key is used when logging on and off.

The *SITE* key selects a site number in satellite switching operations.

b) Keyswitch - The keyswitch has three positions:

OFF enables the operator to perform basic system monitoring and control functions.

PROG enables the administrator to perform a limited set of programming functions.

DISP enables the administrator to perform a wider range of programming functions selected through a monitor display.

c) Monitor Section -

The *MONITOR display window* shows the number of the monitor under keyboard control.

The *OFF* key disarms a monitor from providing an alarm display.

The *ARM* key arms a monitor for alarm display.

The *PROG* key creates monitor tours and accesses program menus.

The *MONITOR* key selects a specified monitor for control.

d) **Camera Section -**

The *CAMERA display window* shows the number of the camera currently shown on the monitor under keyboard control.

The *LAST* key calls the last previous camera displayed in a sequence.

The *B-PAS* key removes a camera from a sequence.

The *ACK* key acknowledges (clears) alarms from monitor screens, and starts system tours.

The *NEXT* key calls the next camera in a sequence.

The *RUN* key runs a camera sequence.

The *HOLD* key holds a sequenced camera on the monitor screen.

The *SALVO* key calls a pre-programmed salvo of camera scenes.

The *CAMERA* key selects a specified camera for view on the monitor under control.

e) **Keypad Section -**

The *ENTER display window* shows values entered on the numeric keypad.

The *numeric keypad* is used to enter numbers representing cameras, monitors, auxiliaries, etc.

The *CLEAR* key clears numeric data from the *ENTER* display window.

f) **Dual Function Section** note: the first member of each function pair is used with the keyswitch in the OFF position. The second member of the pair is used with the keyswitch in the DISP position.

The *OFF* key turns off a specified auxiliary. *ENTER* stores data for a menu function.

ON turns on a specified auxiliary. *EXIT* exits a menu function.

CLOSE closes an iris to restrict light to a camera. The *PAGE up arrow* displays the last previous page of a menu.

OPEN opens a camera iris to allow more light to the camera. The *PAGE down arrow* displays the next page of a menu.

The *NEAR* key focuses the camera for near objects. The *left arrow* moves the cursor one character to the left in a menu.

The *FAR* key focuses the camera for distant objects. The *right arrow* moves the cursor one character to the right in a menu.

The *WIDE* key zooms out for a wide angle camera view. The *up arrow* moves the cursor up one line in a menu.

The *TELE* key zooms in for a telephoto camera view. The *down arrow* moves the cursor one line in a menu.

g) **Preset Section -**

The *CALL* key calls a specified preset scene (keyswitch in "off" position).

The *SET* key sets a particular scene as a preset (keyswitch in "prog" position).

h) **Recessed Speaker** - Provides an audio alarm tone.

i) **Joystick** - Enables movement of cameras with pan/tilt capabilities.

Keyswitch Positions

The AD2078A keyboard controller allows complex video switching operations to be accomplished with a set of relatively simple key commands. System operators will perform many of these operations in the normal course of their shifts, depending on their scope of system access as defined by the system administrator.

The AD2078A's keyswitch enables three operating positions, "**OFF**", "**PROG**", and "**DISP**". The key can be removed only when turned to the "**OFF**" position. With the key removed, operators can perform the following functions *without changing system parameters originally set up by the administrator or system installer*.

- log on and off to the AD168 system.
- call a monitor.
- call a camera to the monitor under keyboard control
- control of pan, tilt, zoom, focus, and iris adjustments
- call presets
- activate auxiliaries
- operate and control tours
- call salvos
- acknowledge alarms

The remainder of this chapter will discuss fundamental keyboard operations.

This manual covers only those keyboard functions which are performed with the keyswitch in the "OFF" position. If authorized by a system administrator, an operator can perform certain keyboard setup and system programming functions. For information about keyboard operation beyond the scope of this manual, please consult your system administrator.

Logging on to AD168

This section describes how to get started using the AD168 system. It discusses the use of passwords to gain access to the system, and how your password defines the level of access you have to the system.

Using Passwords

If your workstation does not require operators to log on to the system with unique passwords, this section does not apply to you.

If passwords are mandatory at your workstation, you will be required to log on to your keyboard controller before you begin to use it. When you log on, you enter a six digit passcode on the numeric keypad of your keyboard. The passcode has been pre-assigned to you by your system administrator.

Partitioning

Depending on which one of the workstation keyboards has been assigned to you, you may not have access to certain video monitors. On the monitors of which you have free access, some system cameras may not be viewable. Additionally, you may be able to view certain cameras, but not control their movements. Such monitor and camera restrictions are referred to as *partitioning*. Partitioning decisions are programmed by your system administrator.

Log On

If passcode entry is required on your 2078A keyboard, the letters "UC" (user code) appear in the keyboard **CAMERA** display window. This code indicates you must enter your passcode before gaining control of the keyboard.

Log on procedure:

- 1) enter your pre-assigned user number (1-64) on the keyboard's numeric keypad.
- 2) press **ACK**.
- 3) enter your passcode on the keypad.

If an incorrect password has been entered press **CLEAR**, and then repeat step 3.

- 4) press **ACK**.

If the passcode does not verify, a tone sounds, and "UC" appears again in the **CAMERA** display. Press **CLEAR** and repeat steps 1 through 4.

If the passcode verifies, the keyboard **MONITOR** and **CAMERA** display windows will clear. This confirms that you have access to the AD168 system.

Log Off

When your shift is completed, it is advisable to log off from the system to prevent access to unauthorized users.

Log off procedure:

Press the **USER** key (log off is complete).

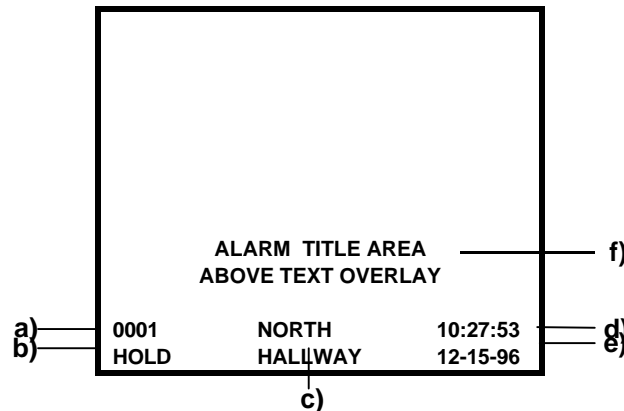
Basic Keyboard Operations (Keyswitch Off)

The following functions are performed with the keyswitch in the **OFF** position.

- Calling a monitor to the keyboard
- Calling a camera to the monitor under keyboard control
- Controlling camera movements
- Calling preset camera scenes
- Activating auxiliary switches
- Operating and controlling pre-programmed tours
- Calling pre-programmed camera salvos
- Acknowledging Alarms
- Locking Out Cameras

Monitor Text Overlays

The workstation monitors display the video from the cameras installed at your site. Each monitor has an identification number associated with it based on its physical connection point on the AD168 switching bay. In addition to the camera video, switching monitors also display a text overlay which provides information about the camera view being displayed. The illustration below shows the basic format of the monitor screen text overlay. The standard monitor title and time/date display has a format of two rows with 24 characters per row. The monitor number/status section consists of 2 rows with a maximum of 7 characters per row. The camera/preset title section consists of 2 rows with a maximum of 8 characters per row. The date and time section consists of 2 rows with a maximum of 8 characters per row. There is always 1 blank character on both of the 2 rows inserted between the camera/preset title section and the time/date section. The alarm title area appears above the standard display, and consists of 2 rows having 24 characters each. All 48 character positions in the alarm title area can be used if required.



- a) **Camera Number** - this identifies the camera being viewed. The number will either be a *real number* corresponding to the camera's physical connection point on the AD168 switching bay, or a *pseudo number*, which is a convenient substitute for the real number that gives a clue as to the camera's location or functions.
- b) **Status Line** - this shows the current status of the camera being viewed. Status information includes camera dwell times, alarm information, tour status, etc. A complete listing of status line displays is included in Appendix B of this document.

- c) **Camera Title** - the camera title provides two lines of information relating to the camera's location or function. The camera title is pre-programmed by the system administrator using S³ software, or by using AD168 menu programming. If a preset (target) title is programmed for a given camera, the preset title will replace the camera title at the time that the preset scene is called to the monitor.
- d) **System Time** - provides the current time in 24 hour format. The system time is programmed by the system administrator using S³ or AD168 menu programming.
- e) **System Date** - provides the current date. This information is also programmed by the system administrator using S³ or AD168 menu programming.
- f) **Alarm Title Area** - When an alarm occurs on an armed monitor, it may be accompanied by a message which will appear directly above the text overlay information discussed in a) through e) above. The alarm message consists of two lines of text, with each line consisting of up to 24 characters of text. The alarm message will be displayed on a red background field. In order for a message to appear with alarm video, an alarm title must be programmed through S³ setup software by a system administrator.

Calling a Monitor to your Keyboard

To bring a system video monitor under the control of a keyboard, you must "call" the monitor. To call a monitor to a keyboard:

- 1) Enter the monitor's number on the keyboard's numeric keypad. The number will appear in the **ENTER** display window.
- 2) Press the **MONITOR** key. The monitor's number will appear in the **MONITOR** display window (if a camera has previously been called to the monitor, that camera's number will appear in the **CAMERA** display window).

Calling a Camera to the Monitor under Keyboard Control

To view a system camera scene, you must call the camera to the monitor currently under the control of the keyboard. To call a camera:

- 1) Enter the camera's number on the keyboard's numeric keypad. The number will appear in the **ENTER** display window.
- 2) Press the **CAMERA** key. The camera's number will appear in the **CAMERA** display window. The camera's video signal and corresponding text overlay will appear on the monitor screen.

Camera Control Functions

Some cameras at your site will be installed in a fixed position. You will not be able to control the movement of these cameras, or adjust their lens settings. Cameras that have *pan/tilt* and *motorized lens capability* can be controlled from your keyboard. To *pan* is to move the camera from side to side. To *tilt* is to move the camera up and down. To *zoom* refers to the apparent action of moving closer to or farther away from an object, as seen through the camera lens. To *focus* refers to the action of adjusting the clarity of the picture on the monitor. If you wish to brighten the picture on your monitor, you will want to open the camera's *iris* to allow more light in the camera. If you wish to darken the monitor picture you will want to close the iris to restrict the amount of light coming into the camera.

Pan/Tilt or Dome Control

- 1) Call a camera with pan/tilt capability to the monitor under control.
- 2) Use the keyboard's joystick to pan and tilt the camera. Release the joystick when the camera is in the desired position.

Zoom Control

- 1) To zoom in, press the **ZOOM TELE** key in the keyboard's dual function section (see page 2-1) until you achieve the desired picture.
- 2) To zoom out, press the **ZOOM WIDE** key in the keyboard's dual function section until you achieve the desired picture.

Focus Control

- 1) To focus on an object located at close range, press the **FOCUS NEAR** key in the keyboard's dual function section, until you achieve the desired clarity.
- 2) To focus on a distant object, press the **FOCUS FAR** key in the keyboard's dual function section until you achieve the desired clarity.

Iris Control

- 1) To brighten the picture, press the **IRIS OPEN** key on the keyboard's dual function section.
- 2) To darken the picture, press the **IRIS CLOSE** key the keyboard's dual function section.

Calling a Preset (Target) Camera Scene

A *preset* is a camera scene whose pan, tilt, zoom, and focus positions are stored in memory, and which can be called to a monitor with simple keyboard commands. Presets are sometimes referred to as *targets*.

To call a preset scene:

- 1) Call a camera with pan/tilt and motorized lens capability to the monitor under control.
- 2) Enter the preset number (1-72) on the numeric keypad.
- 3) Press the **CALL** key in the keyboard's **PRESET** section. The preset scene will appear on the monitor screen.

Activating an Auxiliary

An *auxiliary* is a relay switch which controls the "on/off" state of devices such as door locks, lights, and gates. Auxiliaries are associated with cameras within the AD168 system, and can be controlled by the **AUXILIARY ON** and **OFF** keys through the keyboard controller.

A *momentary auxiliary* remains active as long as its control key pressed. An example of momentary action is a door that remains unlocked as long as the **AUXILIARY ON** key is pressed. When the key is released, the door is locked again.

A *latched auxiliary* is activated when the **AUXILIARY ON** key is pressed, and de-activated when the **AUXILIARY OFF** key is pressed.

To activate an auxiliary:

- 1) Call the camera associated with the appropriate relay to the monitor under keyboard control.
- 2) Type in an auxiliary number from 1 to 3.
- 3) Press the **AUXILIARY ON** key.
When the **ON** key is released, a latched auxiliary remains activated. A momentary auxiliary is deactivated.
- 4) To de-activate a latched relay, press the **AUXILIARY OFF** key.

Operating Tours

A *tour* is a pre-programmed sequence of camera scenes that appear one after the other on monitor screens. A *monitor tour* is a temporary or "scratch pad" tour programmed through the monitor section of the keyboard controller. A *system tour* is a tour programmed by the system administrator as an integral part of the system setup procedure. System tours can be called and controlled through a keyboard controller with the keyswitch in the **OFF** position.

Starting a System Tour

- 1) Call the monitor which will display the tour.
- 2) Enter the system tour number (1-64) on the numeric keypad.
- 3) Press the **RUN** key in the **CAMERA** section of the keyboard. You are then prompted on the monitor screen to press **ACK**.
- 4) Press the **ACK** key *within two seconds* of pressing the **RUN** key.
If the ACK key is not pressed within the two second interval, repeat the procedure from step 2. Note: *once a system tour is acknowledged, it becomes the current monitor tour. The tour can be modified on the called monitor without changing the original definition of the system tour.*

Controlling Tours

Once any tour is started, it is operated and controlled in the same way, regardless of its definition (monitor or system tour), and regardless of how it was started (through an operator's keyboard action, or through automatic, pre-programmed system timing). The tour cycles continuously until an operator holds the tour, or until another camera scene or tour is called to the monitor.

- While a tour is running, the monitor status line shows the *dwelt time* for each scene as it is shown in the sequence. The dwell time is simply the duration of each scene in the sequence, and can vary from scene to scene. A dwell time can range from 1 to 60 seconds. A dwell setting of 61 instructs the tour to hold (stop) on the camera scene to which it is assigned.
- When a tour is running in the forward direction, an "F" is displayed beside the dwell time.
- When a tour is running in the reverse direction, an "R" is displayed beside the dwell time.

Changing a Tour's Direction

- Press the **NEXT** key in the keyboard's section to change the tour to forward direction.
- Press the **LAST** key in the keyboard's **CAMERA** section to change the tour to reverse direction.

Holding a Tour

- Press the **HOLD** key in the keyboard's **CAMERA** section to hold (stop) a tour on the currently displayed camera scene. While a tour is held on a camera, keyboard control functions such as pan, tilt, zoom, focus, iris, preset call, and auxiliary activation can be performed on that camera.

To remove a camera from a tour on hold:

- Press the **B-PAS** key on the keyboard's **CAMERA** section, and then step to the next camera in either the forward or reverse direction.
- Press the **NEXT** key on the keyboard's **CAMERA** section to set the tour to the forward direction.
- Press the **LAST** key on the keyboard's **CAMERA** section to set the tour to the reverse direction.
- Press the **RUN** key in the keyboard's **CAMERA** section to resume the tour in the selected direction.

Calling Camera Salvos

A salvo is a group of camera scenes that can be called for simultaneous display on a contiguous group of monitors. Salvos are programmed by the system administrator through S³ software.

To call a salvo:

- 1) Enter the number of the *first (lowest numbered) monitor* in the salvo group on the numeric keypad.
- 2) Press the **MONITOR** key in the keyboard's monitor section. The number will appear in the monitor display.
- 3) Enter the salvo number (1-64) on the keyboard's numeric keypad.
- 4) Press the **SALVO** key in the keyboard's **CAMERA** section. The salvo will appear on the appropriate monitor group.

The on-screen status line of each monitor displaying a salvo camera scene shows the word "SALVO". If a salvo is called in response to a system alarm, the first monitor of the group will display the word "ALARM" on the status line. The remaining monitors in the alarm salvo group will display the word "SALVO" in the status line.

Acknowledging Alarms

System cameras in the AD168 system are associated with alarm contacts connected to key security points under camera view. If an alarm is activated, the camera scene associated with the alarm will appear on a system monitor or monitors that are *armed* for alarm display (alarm contacts are associated with specific monitors through S³ system setup software). When the alarm camera scene appears on the monitor screen, the word "ALARM" appears on the monitor's on-screen status line. If an alarm title has been programmed by the system administrator, the alarm title will appear in the alarm title area.

Some system monitors are armed for automatic or delayed automatic clearance. Monitors armed for manual clearance (acknowledgment) can be cleared from a keyboard controller.

To acknowledge an alarm:

- 1) Call the monitor that is displaying the alarm video.
- 2) Press the **ACK** key in the keyboard's **CAMERA** section.

To acknowledge an alarm salvo

- 1) Call the first (lowest numbered) monitor in the alarm group.
- 2) Press the **ACK** key.

If a monitor is cycling through a sequence of multiple alarm scenes:

- 1) Hold on or step to (press **NEXT** or **LAST**) the first alarm to be cleared.
- 2) Press the **ACK** key.
- 3) Repeat steps 1) and 2) for each alarm in the sequence

To acknowledge a wired set:

If a wired set (see Glossary) is associated with an alarm contact, call the monitor associated with the alarm contact and press **ACK** to clear the alarm. All alarms in the wired set are cleared when this alarm is cleared.

Camera Lockout

Cameras can be “locked out” to prevent other keyboard operators from controlling their movements. If a camera is locked out, other operators will be able to view the camera, but will not be able to control its pan, tilt, zoom, focus, iris, preset, and auxiliary functions. When an operator calls a camera that has been locked out, the word “**LOCK**” appears on the monitor’s status line.

An operator who has the *same or lower priority level* than the operator who locked the camera out, cannot control the camera.

An operator with a *higher priority level* than the operator who locked the camera out, can gain control of the camera.

To lock or unlock control access to a camera:

- 1) Call or hold the desired camera on the monitor under your keyboard control
- 2) Enter either of the following F1 code combinations:

“1 F1” to unlock the camera

“2 F1” to lock the camera

Appendix A: AD168 System Defaults

The following default values are set at system start-up, or through the *System Reset* function performed by a system administrator.

Keyboard Control:

All monitors switch to camera 0 (color bar pattern). No monitors are under keyboard control.

Basic Programming Defaults:

Note: Functions listed in the table below are programmable through AD2078A and ADTT Touch Tracker keyboards.

Function	Default
Date Format	MM-DD-YY
Monitor Display Arrangement	Status, titles, date, and time displayed on bottom of monitor screen.
Monitor On-Screen Display	All monitors unlocked
Camera Lockout	All cameras unlocked
Camera Video Loss Detection	All cameras set to <i>off</i> . Video loss detection disabled
Monitor Tour	Monitor tour erased for all monitors
Monitor Arming	All monitors disarmed
Audio Alarm	Audio alarm enabled system wide

Full-Scale Programming Defaults:

Note: Defaults marked by an asterisk (*) accessible only through S³ software

System Options	
User IDs	Disabled. No passcode entry required
Menu Callup	No camera number defined
Messages	All messages printed. No program monitor output
Time and Date	Set to the time and date of the embedded system software
Ports	
Baud Rate:	1200 bps (Ports 1-7) 38.4K bps (Port 8)
Port Use	Keyboard (Ports 1-7) Terminal (Port 8)
System Tours*	
Camera	0
Dwell Time	0
Preset	0
Auxiliary	0
Connect Next	No
System Salvos*	
Camera	0
Preset	0
Auxiliary	0
Connect Next	No
Event Timers*	All timers = 24:00. All alarm table entries = 0. No callups set
Alarm Contacts/Cameras*	Contacts assigned in blocks of 180, up to 1024 contacts
Dwell Time	2
Preset	0
Auxiliary	0
Connect Next	No
Alarm Contacts/Monitors*	All positions set to "No". No alarm contact / monitor association
Monitor Arming*	
Arming Code	Disarmed
Block	0
Monitor Status	
Tour	None
Tour Status	Hold
Display	Status. Titles, Date, and Time on.
Pseudo Numbers	one-to-one correspondence with real camera inputs (1-180)
Titles (Cameras, Presets, Alarms)	All titles blank
Users / Keyboards	
Users:	Priority level = 8. No passcodes
Keyboards	Priority level = 8
Priority Levels	Level = 1, all functions except Override set to Yes
Partitioning*	
Keyboard/Monitor	All positions set to "Yes", access allowed
Keyboard/Camera View	All positions set to "Yes", access allowed
Keyboard/Camera Control	All positions set to "Yes", access allowed
Monitor/Camera	All positions set to "Yes", access allowed

Appendix B: On-Screen Status Line Displays

Normal System Operation

The following messages appear on monitor on-screen status lines during normal system operation.

Code	Description
ALARM	Displayed when an armed alarm contact is activated. The message remains on the monitor until the alarm is cleared.
ACK nn	Displayed when the ACK key is pressed to start a system tour. The message indicates the tour number selected, and remains displayed until the first camera in the tour is called to the monitor.
nnF	Displayed during system tour operation. "nn" indicates the dwell time in seconds of the currently displayed camera, and the letter "F" for a tour running in the forward direction.
nnR	Displayed during system tour operation. "nn" indicates the dwell time in seconds of the currently displayed camera, and the letter "R" for a tour running in the reverse direction.
HOLD	Displayed during a tour hold. The message indicates that the tour is on hold at the currently displayed camera.
SALVO	Displayed when a system salvo has been called to the monitor.
IN USE	Displayed when a another keyboard has control of the currently displayed camera.
LOCK	Displayed when the camera has been locked out by another keyboard.
NO CTRL	Displayed when a camera has been called by a keyboard that has been partitioned such that it cannot control the movements of the camera.

Appendix C: Printer Messages

The following messages are printed from the parallel printer port and any serial port programmed as a printer port. The first two fields of all printed messages display the current system date and time.

Alarm Messages

Messages are printed in the following format at every occurrence of an alarm event.

Format	05-MAR-	13:23:26	CONTACT 0001	CAM 0001	CONTACT OPENED
Description	date of the alarm event	time of the alarm event	alarm contact activated	camera linked with alarm event	alarm status

Alarm Status Categories

- *Contact Opened* - the alarm contact input has been removed/reset (Instant Clear)
- *Timed Out* - the alarm has been cleared by timeout (Auto Clear)
- *Acknowledged from Keyboard nn* - the alarm has been manually cleared from keyboard *nn*

Video Loss Messages

Messages are printed in the following format at every occurrence of video and/or sync event.

Format	05-MAR-1996	13:23:26	CAM 0001	VIDEO YES	SYNC YES	SET LOW
Description	date of video event	time of video event	video status camera number	video status	sync status	video loss detection mode

Video Status Categories

- *Video Yes* - indicates that the video signal is present
- *Video No* - indicates that there is no video signal
- *Video Lost* - indicates that the video signal was just lost
- *Video Restored* - indicates that the video signal was just restored

Sync Status Categories

- *Sync Yes* - indicates that the sync signal is present
- *Sync No* - indicates that there is no sync signal
- *Sync Lost* - indicates that the sync signal was just lost
- *Sync Restored* - indicates that the sync signal was just restored

Video Loss Detection Mode

- *Set Off* - video loss detection disabled
- *Set Low* - sync and low picture content video loss detection enabled
- *Set Medium* - sync and medium picture content video loss detection enabled
- *Set High* - sync and high picture content video loss detection enabled
- *Set Sync Only* - only sync loss detection enabled

Menu Access / Exit Messages

The following messages are printed each time that an operator accesses or exits the menu system.

05-MAR-1996	13:23:26	MENUS ACCESS OCCURRED
05-MAR-1996	13:23:26	MENUS EXITED OCCURRED

Power Status Message

The following message is printed each the AD168 system is powered on.

05-MAR-1996	13:23:26	POWER RESTORED
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Note: When the MESSAGES TO PROGRAM MONITOR option of the System Options function is enabled, the messages selected in PRINTER MESSAGES are displayed on the AD168 program monitor video output (in addition to being printed).

Appendix D: SpeedDome Series Programmable Commands

When used in combination with numeric keypad inputs, the F1 keys on the AD2078A and AD Touch Tracker keyboards accomplish specific functions related to the operation of SpeedDome, SpeedDome LT, and SpeedDome Ultra domes. Following is a list of F1 key combinations and their associated functions.

Keys	Function	Keys	Function
19-F1	Flip Camera Position 180°	33-F1	Go to Pattern # 3
20-F1	Reset Iris	41-F1	Auto Repeat Pattern # 1
21-F1	Run Pattern # 1	42-F1	Auto Repeat Pattern # 2
22-F1	Run Pattern # 2	43-F1	Auto Repeat Pattern # 3
23-F1	Run Pattern # 3	69-F1	Return to Auto Iris / Auto Focus
30-F1	Reset Dome	70-F1	Set Auxiliary 4 OFF
31-F1	Go to Pattern # 1	71-F1	Set Auxiliary 4 ON
32-F1	Go to Pattern # 2		

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Glossary

A

alarm contact	A sensor which, when activated, signals a change from normal system operation. Alarm contacts are associated with cameras or camera salvos in programmable alarm tables.
alarm table	A table written in computer memory which associates alarm contacts (sensors) with cameras or and/or camera salvos. The table includes information about camera dwell times, preset numbers, auxiliary status, alarm title numbers, camera linking status, and alarm scene locations.
arming	Arming is the process by which a video monitor or monitor block is associated with a specific alarm contact, and is assigned an appropriate monitor arming code.
arming code	A monitor's arming code defines how an alarm scene will be displayed, queued, and cleared on the monitor. Display methods include Single, Dual, and Block. Queuing methods include Hold and Sequence. Clearance methods include Instant, Auto, and Manual.
auto clearance	Automatically clears the alarm camera scene 20 seconds after the associated alarm contact is reset at its source location. If the alarm is set again within the 20 second interval, it does not clear (for example, a door equipped with an alarm sensor is opened, closed, and opened again within 20 seconds).
auxiliary	A relay switch which controls the "on" or "off" state of devices such as door locks, gates, and lights.

B

baud rate	A rate of transmission measured by the number of bits per second sent over a computer-controlled communications line.
bay	An enclosure containing the electronics modules and bus circuitry necessary to perform <i>switching system</i> functions. The AD168 system is available in both single and dual bay configurations.
block	A contiguous group of video monitors. Contiguous is defined as an uninterrupted integer sequence. For example, monitors 1,2,3,4, and 5 are contiguous. Monitors 1, 3, 5, and 7 are not.
block display	Multiple alarm camera scenes are displayed on the block of monitors with which they are associated. The lowest number of the block displays the first alarm scene, the second lowest numbered monitor of the block displays the second alarm scene, and so on.

C

camera lock	camera lock is a programmable function which prevents a user or keyboard from controlling camera pan/tilt and lens adjustments, preset positioning, and auxiliary actions.
connect next	"Connect Next" refers to a set of linking options used with <i>tours</i> , <i>salvos</i> and alarm contact tables, which defines how each salvo, tour, or alarm contact table entry is connected to the next entry.

D

data bits	The number of bits in a data word.
dedicated monitor	A monitor connected directly to a specific camera via coaxial cable. A dedicated monitor displays the video from a single camera input only. Compare with <i>switching monitor</i> .
dual display	Two or more alarm camera scenes are displayed on the two monitors with which they are associated. The two monitors are defined, respectively, as the <i>hold monitor</i> , and the <i>sequence monitor</i> . The hold monitor displays the first alarm received. All subsequent alarms are queued for display on the sequence monitor. When an alarm scene is cleared from the hold monitor, it is replaced by the alarm scene previously displayed on the sequence monitor. The sequence monitor then displays the next scene in its queue.
dwelt time	The amount of time an individual camera scene is displayed on a monitor screen before being replaced by the next scene in sequence.

E

event timer	A programmable time slot which associates tours, monitors, and alarm contact tables with specific times of day and specific days of the week. 35 event times are available in the AD168 system.
-------------	---

F

fixed camera	A camera which views a scene from a single perspective. A fixed camera cannot pan or tilt, or make automatic lens adjustments.
flip	To instantaneously position a dome 180° in the opposite direction of where it is currently pointing.
focus	The process of adjusting the clarity of a scene or an object, as seen through a camera.

H

hold queuing	The first alarm camera scene displayed on its associated monitor is held there until the alarm is cleared. Subsequent alarms are queued behind the first alarm, pending its clearance. As each displayed alarm is cleared, the next scene in queue takes its place on the monitor display.
--------------	--

I

input	A device such as a door contact, a smoke detector, or a twilight sensor, that, when configured to do so, can activate an alarm when it undergoes a change of state.
instant clearance	Automatically clears the alarm camera scene immediately after the associated alarm contact is reset at its resource location (this entails opening or closing a switch, and can be as straightforward as closing an opened door).
iris	The camera component that determines how light enters the camera. By adjusting the iris, you can adjust the brightness and darkness of the video on the monitor.

L

latched auxiliary	An auxiliary that remains active until it is deactivated using the appropriate off switch. An example of a latched auxiliary is a light. When the keyboard controller's Auxiliary On button is pressed, the light is turned on. When the Auxiliary Off button is pressed, the light is turned off. <i>See also auxiliary and momentary relay.</i>
log in	If this function is enabled, system keyboard access is restricted to only those users entering a user number (1-64) and a six digit passcode. When the function is disabled, system access is restricted only by the <i>priority level</i> set for the keyboard in use.

M

manual clearance	A system operator clears the alarm scene when it is displayed on its associated monitor by pressing the ACK key on the AD2078A or ADTT Touch Tracker. If the displayed alarm camera scene is a member of a wired set, and is programmed with the <i>connect next</i> option of "Wired Group Ack", all members of the wired set will be cleared simultaneously.
menu callup	The menu callup function identifies the video input that the <i>program monitor</i> output is connected to. Menu callup allows an administrator to call the video input to any system monitor. By turning the AD2078A keyswitch to the "DISP" position, the administrator can then perform menu programming using the system monitor.
monitor	The screen where camera video is displayed.
monitor tour	A sequence of video inputs with specified dwell times that are displayed one after the other on a monitor called manually by a system operator.

O

output	An <i>auxiliary</i> signal. Outputs lock and unlock doors, turn lights on and off, activate audible alarms, etc. Outputs can also be initiated automatically in response to an alarm.
override	If the override function is enabled for a specific priority level, a user assigned to that priority level can override a keyboard's camera view and control partitioning when using that keyboard.

P

pan	Side to side camera movement
parity	An extra bit added to a byte, character, or word to ensure that there is always either an even or odd number of bits, according to the logic of the operating system. If a bit is lost in transmission, its loss can be detected by checking the parity.
partitioning	To partition is to restrict access to one system device from another. Keyboards can be partitioned from calling specific monitors. Keyboards can also be partitioned from viewing and/or controlling cameras. Monitors can be partitioned from displaying specific cameras.
passcode	A six digit passcode that an operator must enter on the keyboard before gaining access to the AD168 system. Note: if <i>log in</i> is disabled, passcode entry is not necessary.
password	If PC password protection is enabled on S ³ software, a dialog box will appear on program startup which requires the user to enter a name and password before gaining further access to S ³ .

pattern	A sequence of pan, tilt, zoom, focus, and iris movements from a single programmable dome. The dome “learns” these movements in real time through keyboard programming, and can replay them automatically.
port configuration	The setting of a communications port’s baud rate, data bits, parity, stop bits, and device type, to enable the device to communicate successfully with another device to which it is connected.
preset	A preset is a pre-positioned camera scene which can be programmed with cameras installed with pan/tilt and motorized lens capability. A preset can be called to a monitor through manual keyboard control, or can appear automatically as part of a system <i>tour</i> or <i>salvo</i> . Presets are also referred to as <i>Targets</i> or <i>Shots</i> .
priority level	priority levels are assigned to users and keyboards to either allow or restrict access to six AD168 system functions: <i>system reset</i> ; <i>camera lock</i> ; <i>override</i> ; <i>menu access</i> ; <i>parameters</i> ; and <i>add users</i> .
program monitor	A video output on the AD168 central processing module with a resident character generator. The program monitor output can be connected to a dedicated monitor, or can be connected to an AD168 video input module for switching to any system monitor.
pseudo number	A pseudo number is one substituted for a “real” camera number to provide a clue as to the camera’s location or function. The real camera number is determined by the camera cable’s connection point on the AD168 <i>bay</i> . For example, cameras installed on the first floor of a location can be numbered 1001, 1002, 1003, etc. Cameras installed on the second floor can be numbered 2001, 2002, 2003, and so on. AD168 accepts pseudo numbers ranging from 1 to 9999.

S

salvo	A salvo is a simultaneous display of multiple camera scenes appearing on a contiguous set of monitors. A salvo can be called manually by a system operator, or can appear automatically as part of a system tour or alarm call-up.
sequence queuing	Multiple alarm camera scenes associated with a particular monitor are displayed in sequence, with a pre-programmed dwell time for each scene. The scenes will continue to cycle on the associated monitor in the order in which the alarms were activated until each scene is cleared.
single display	An alarm camera scene is displayed only on the single monitor with which it is associated. Multiple alarms received on the same monitor are queued as defined by the monitor’s queuing method.
stop bit	A bit or group of bits that identifies the end of a data word, and defines the space between data words.
switching monitor	A monitor connected to a switching bay which can display the video signals from any camera connected to the bay. Compare with <i>dedicated monitor</i> .
switching system	A system in which an incoming video signal or signals are routed to a bay, and then can be switched either manually or automatically to any one of multiple video outputs. The AD168 switching system can accommodate up to 168 video inputs and up to 24 video outputs.

T

tilt	Up and down camera movement.
toggle	To alternate the current state of an output. If the output is currently off, toggling it will turn it on, and vice-versa.
touch tracker	One of the two keyboards that can be used in the monitoring and control of the AD168 switching system.
tour	A tour is a sequence of camera scenes viewed on at a time on a video monitor. A monitor tour is a temporary sequence of scenes programmed for a single monitor. A monitor tour can contain up to 64 camera, with a dwell time for each camera. A system tour is a pre-programmed through S ³ setup software. 64 system tours can be programmed for callup, either by an operator, or an automatic timed event, to any system monitor at any time. Each system tour can contain up to 64 entries with dwell time, with optional preset and auxiliary action for each camera.

U

user number	A number ranging from 1 to 64 identifying an authorized user to the AD168 system. The user number is used in concert with a six digit passcode to access the system from a keyboard.
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W

wired set	A wired set is a set of alarm contacts such that when any one member of the set is activated, all of the members are activated.
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Z

zoom	The action of apparently moving closer to or away from an object, as viewed through a camera lens.
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AMERICAN DYNAMICS

Sensormatic CCTV Systems Division
One Blue Hill Plaza • Pearl River • New York 10965
Technical Support Center 800-442-2225 • Business 914-624-7600

SENSORMATIC ELECTRONICS CORPORATION

951 Yamato Road • Boca Raton • Florida
Telephone 561-989-7000 • Telefax 561-989-7017 • Toll Free 800-241-6678



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